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# Agricultural Libraries Information Notes



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photo: J. Swab

Karen Reed, Library Technician, Indexing Branch, NAL, uses the TransImage 1000 Hand-scanner to input the desired bibliographic data and abstract of a document for wordprocessing on a personal computer.

## Optical Scanning in a Production Environment: The TransImage 1000 Handscanner

by Shirley J. Edwards  
Head, Indexing Branch, NAL

The National Agricultural Library disseminates agricultural information through a variety of products and services. One of its major informational products is AGRICOLA (*AGRICultural OnLine Access*), a bibliographic database available on CD-ROM, online, and in print under the title *Bibliography of Agriculture*. Much time and expense is incurred in keying data into NAL's Four Phase minicomputer to produce AGRICOLA.

### Magic Wand Project

In March 1986, NAL received \$16,000 in evaluation study funds from the U.S. Department of Agriculture to determine if optical character recognition (OCR) technology could be used to expedite the process of creating bibliographic records. Officially, the study was entitled: "Optical Character Recog-

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tion by Hand-held Device, in Lieu of Keyboarding Data for Indexing and Cataloging Records." Unofficially, it was called the "Magic Wand Project."

NAL envisioned a hand-held OCR device that could scan relevant bibliographic data from books and journal articles, store the scanned data, and, ideally, link it with the appropriate MARC tag. NAL entered into a cooperative agreement with the Graduate School of Library and Information Science of the University of California at Los Angeles. Under the direction of then Dean Robert M. Hayes, several scanners were investigated and tested.

Three scanners, a Saba Handscan, a TransImage 1000, and a Microtek were purchased and thoroughly evaluated. Although it was determined that scanning was faster than keying, it was also noted that the error rate was a significant deterrent to introducing a scanner into an operational library setting. Furthermore, it was determined that no known device existed which provided any degree of format recognition. The UCLA Graduate School of Library and Information Science completed its study in November 1988, and sent the equipment to NAL.

NAL had decided to enhance AGRICOLA by increasing the number of citations containing abstracts. To assist with the additional work load, two more Library Technicians were hired to manually key author abstracts. An average of 14 records without abstracts can be keyed per hour. However, the addition of an abstract to a record reduces the average number to three per hour. This decrease in productivity provided strong incentive for finding a more efficient method.

When the TransImage 1000 handscanner purchased through the Magic Wand Project was received, NAL wanted to test the feasibility of scanning author abstracts, converting them into machine-readable format, and merging them with indexing records stored on the Four Phase minicomputer. Merging data elements correctly from multiple sources was considered to be a formidable challenge.

An interdepartmental project was initiated between NAL's Indexing Branch and Library Automation Branch to evaluate optical scanning technology for data capture of bibliographic information and to compare it with manual data entry. After meetings were held to develop procedures and workflow, there was a shakedown period in September 1988; actual evaluation began in October and continued for four months.

### TransImage 1000

The TransImage 1000 handscanner was tested on three microcomputers in the Indexing Branch: an IBM AT with a monochrome monitor (DOS ver. 3.2), a Beltron 8088 with a color EGA monitor (DOS ver. 3.21), and an AST 286 with a

color EGA monitor (DOS ver. 3.21). The scanner was tested with MultiMate Advantage II word processing software and the MultiMate Word Wrap application bridge. The following microcomputer environment is required:

- IBM PC or 100% PC compatible
- Monitor with graphics capability in order to take full advantage of the training feature
- 384K RAM
- TransImage PC Board requires 1 full-size option slot
- Hard disk drive with one or two floppy disk drives
- DOS version 2.0 or higher
- Word processing software

The TransImage 1000 handscanner is small and compact, can be used by both left- and right-handed people, has rollers on the bottom to facilitate movement across a document, and allows the operator to extract data from documents selectively.

### Capabilities and Limitations

The User's Manual states that the scanner has the following capabilities and limitations:

1. Recognizes standard U.S. uppercase and lowercase letters, numbers and symbols (A-Z, a-z, 0-9, ., ;, ' " ? / \ ! @ # \$ % & \* ( ) - + = [ ] British pound sign, degree symbol, and cent symbol).

2. Characters must be fully formed and clearly separate from surrounding characters to be recognized.

3. Does not recognize text from a 9-pin dot matrix printer or handwriting.

4. Multiple type styles and fonts are recognized, including standard and bold styles.

5. Accommodates character sizes from 8 to 14 point.

6. Recognizes fixed or proportionally spaced text.

7. Ignores boxes, underlining, grids, etc., if they do not touch the characters.

8. Data are recognized at 40 characters per second with 99.6% accuracy, that is no more than 4 unrecognized characters per 1,000 characters.

9. Does not recognize red text since the illuminating LEDs are red.

10. Does not recognize white text on a dark background.

11. Recognizes ligatures and kerned characters [i.e., "fi" and "ve"].

12. Works automatically with MS-DOS and PC-DOS compatible software via specially designed application bridges, including built-in applications for WordStar, Lotus 1-2-3, WordPerfect, MultiMate and dBase III. An application bridge is a group of settings for the operation of the TransImage 1000. These settings enhance and streamline the use of the scanner with the application software program in use.

13. The character dictionary, which is part of the recognition files, can be modified by the "training mode." The

**Table 1**

#### Statistical Data

	Keyed	Scanned
Total Records	338	471
Number of Errors	86	18,441
Hours Keying	78.5	28.5
Hours Scanning	—	16.5
Hours Proofing/Correcting	30	86.25
Total Hours	108.5	131.25



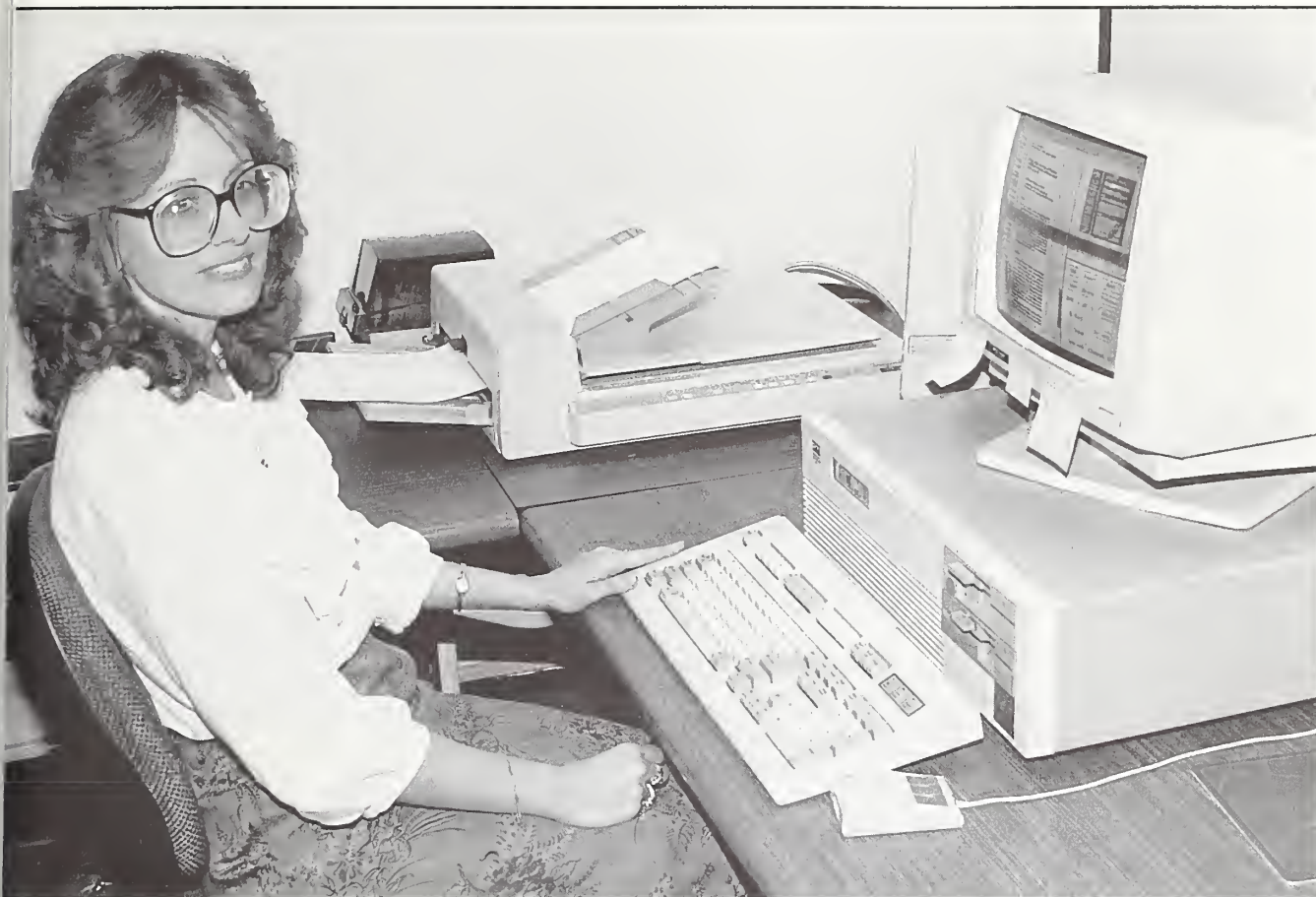


photo: J. Swab

Karen Reed was the lead technician in NAL's Indexing Branch on the project to test and evaluate the use of hand scanning devices. Since December 1989 she has been using an OfficeScan 2000 Work Station to scan full pages from which she selects and edits elements to be used in the indexing records. The scanner can be seen here on the table next to the computer, and an image of the full page just scanned is on the monitor screen. An evaluation report on this system is in preparation and will appear in a future issue of *ALIN*.

character dictionary contains all the characters that the system can recognize. When a scanned image is a symbol not in the character dictionary, the TransImage system displays either an asterisk (\*) or an incorrect character. The training mode allows the user to change the meaning of the scanned image.

In general, training can be classified into four categories:

- New shapes, such as copyright symbols, trademarks, logos and icons.
- Abnormally shaped images, such as a broken "g."
- Characters in a new type style which the system has not been specifically trained to recognize.
- New ligatures that the system has not been specifically trained to recognize.

Training cannot improve character recognition in all cases. The system cannot train on characters that are broken into two distinct parts and should not be trained when training could cause misrecognition between the broken character and other existing characters in the dictionary.

14. The camera exposure setting which controls the amount of illuminating light can be modified. This feature is useful to improve image capture for multigeneration photocopies, laser printer documents, bold typeset documents, and low-contrast documents.

## Workflow and Procedures

The procedures and workflow established for the Indexing Branch during this project included the following:

1. Journals with abstracts to be keyed or scanned were assigned an 8-digit accession number to each article that had been indexed.

2. All data elements except the author abstract were manually keyed into the Four Phase minicomputer, including the accession number.

3. Moving from a Four Phase terminal to the microcomputer with the TransImage scanner attached, the technician created a new file in MultiMate and scanned abstracts onto a floppy diskette. Each abstract was linked to the record entered on Four Phase by manually prefixing it with the same accession number and the 520 MARC tag as follows:

@ ADD IND88035045

@ 520\*\*#a

4. The abstracts were visually proofed and errors were corrected. The number of errors and other data were recorded for subsequent analysis.

5. MultiMate Spell Check was performed on each abstract and additional errors were corrected and recorded. Words not recognized by the Spell Check function of Multi-

**Table 2****Time Comparison: Keying Vs. Scanning**

	Articles Keyed	Articles Scanned
Scanning	—	2.1 minutes/record 28.5 records/hour
Keying	13.9 minutes/record 4.3 records/hour	3.6 minutes/record 16.5 records/hour
Proofing/Correcting	5.3 minutes/record 11.3 records/hour	10.9 minutes/record 5.5 records/hour
Errors/Record	.25 errors/record (every 4th record will have 1 error)	39 errors/record
Average Time/ Complete Record	19.2 minutes/record (3.1 records/hour)	16.6 minutes/record (3.6 records/hour)

Mate were added to the Spell Check dictionary.

6. At the end of the week, the file was converted into ASCII format and given to a person on the staff of the Library Automation Branch.

The staff of the Library Automation Branch visually proofed the data, electronically sent the ASCII file to the National Computer Center in Kansas City, merged the abstracts with corresponding records in the Indexing Master File on the Four-Phase minicomputer, and produced a proof list containing merged data for visual inspection by the Indexing Branch technician.

## Results and Discussion

Scanning and correcting abstracts typically took 16-17 minutes, depending on the length of the abstract, compared to 19-20 minutes to key on Four Phase manually. These results were surprising because the scanner made many errors which had to be corrected. Even so, scanning was faster than manual keying.

Although the scanner had an exposure setting for the type of print it could scan, the setting seemed to make little or no difference on bold black letters or if the letters were too close together. Seventy-five percent of the journals scanned had dark black letters. Additional statistical data and findings are provided in Tables 1-3.

A few of the many problems encountered in scanning included:

1. B scanned as 8 and vice versa
2. S scanned as 5 and vice versa
3. O scanned as 0 and vice versa
4. a scanned as m
5. 2 scanned as Z and vice versa
6. 1 or T scanned as I and vice versa
7. C scanned as L
8. ry scanned as w
9. fl scanned as h

10. p scanned as Q
11. L scanned as r or [
12. k scanned as h
13. m scanned as w and vice versa
14. ff or fl or fr or fi; or ; and %, [], and () scanned incorrectly
15. symbols, sub- and superscript, +, and italics did not scan
16. hyphens at the end of a line scanned as such and had to be corrected

The scanner has a training feature which allows the operator to scan text and change the meaning of a scanned image. However, this was only useful on the journal currently being scanned, and it was discovered that the training feature could backfire (e.g., after the scanner was trained to recognize a letter it had misread, it scanned incorrectly throughout the abstract another letter it had read correctly before training). The training feature also presented a problem in

recognizing and changing three or more consecutive letters at one time.

## Ergonomic Considerations

As mentioned earlier, the TransImage has a scan button on each side which allows it to be used by both right- and left-handed people. The technician found it awkward to press only one button. Her finger would tend to slip off before scanning the entire abstract. Operation was made easier by holding in both scan buttons.

Other difficulties encountered included the camera's red light which caused the operator to see spots before her eyes and also made it difficult to align the Text Guide with the text being scanned. Also, glare on glossy paper made scanning more difficult and by afternoon caused slight eye strain, and the operator's hand had a tendency to go downhill after scanning awhile. The performance of the TransImage was not noticeably different on any of the three microcomputers used.

Even though scanning abstracts with the TransImage was faster than keying, the accuracy of the scanner was inadequate for NAL's application. The level of frustration was too great for use in a production environment. However, the project was not a failure or without rewards because a procedure was developed for merging data elements from multiple sources to produce indexing records for AGRICOLA. This success led to further investigation of recent advances in OCR software. NAL staff has identified a scanning system that it believes will meet our requirements for speed and accuracy. We look forward to testing it.

## Reference

*TransImage 1000/User's Manual* (Version 1.1), 1988, p. 1-13 - 1-17.

This article was previously published in *CD-ROM Professional*, January 1991, pp. 54-57.



**Table 3****Percentages of Time for Keying Vs. Scanning**

	Articles Keyed	Articles Scanned
Scanning	—	13% (2.1 minutes/record)
Keying	72% (13.9 minutes/record)	22% (3.6 minutes/record)
Proofing/Correcting	28% (5.3 minutes/record)	65% (10.9 minutes/record)
Total	100% (19.2 minutes/record)	100% (16.6 minutes/record)



**USAIN**

United States  
Agricultural  
Information  
Network

## USAIN Activities 1990-1991

by Sarah E. Thomas

Associate Director for Technical Services, NAL

The United States Agricultural Information Network (USAIN) was formed in 1988 to provide a forum for discussion of topics relating to agricultural information. The organization consists of approximately 200 individual and institutional members representing a broad spectrum of land-grant university librarians, special librarians, and others interested in the promotion of access to agricultural information. In June 1990 Julia Peterson, Manager, Information Center, Cargill, Minneapolis, Minnesota, was elected President of USAIN by the USAIN Executive Council. Other members of the Executive Council are John Beecher, Past President (North Dakota State University); Douglas Jones, Secretary/Treasurer (University of Arizona); Elaine Albright (University of Maine); Eleanor Frierson (formerly CGIAR Secretariat, World Bank); Eleanor Mathews (Iowa State University); Susan Nut-

ter (North Carolina State University), and Marilyn Sharrow (University of California at Davis).

USAIN members have been active in shaping the organization and in establishing objectives. In the past year, USAIN members have accomplished the following:

### Outreach

In May 1990, USAIN President John Beecher, Director of Libraries, North Dakota State University, addressed

participants at the seventh IAALD (International Association of Agricultural Librarians and Documentalists) World Congress in Budapest, Hungary on the foundation and goals of USAIN.

### Program Meeting

USAIN held its first program meeting at the University of Illinois at Urbana-Champaign in November 1990. The program featured Bob Bergland, former Secretary of Agriculture and present Executive Vice President of the National Rural Electric Association as the keynote speaker. Other speakers included Dr. Robert Rubinyi, University of Minnesota Extension Service; a panel of four corporate agricultural librarians; several land-grant university librarians; and faculty from the University of Illinois. In addition to the presentation of papers, the meeting provided an opportunity for USAIN committees to confer, for a general assembly of members, and for demonstrations of new technologies. (See ALIN 17(2/3):1-10, Feb/Mar 1991, for complete coverage of this meeting.)

### American Library Association

Traditionally, USAIN updates are held at both the annual and midwinter meetings of the American Library Association in conjunction with the National Agricultural Library update. In June 1990 in Chicago, attendees heard Tracy Casorso, North Carolina State University, discuss plans for

## United States Agricultural Information Network Conference

October 14-16, 1991

**"Electronic Information in the Agricultural Sciences"**

The Humphrey Institute Conference Center  
University of Minnesota, Minneapolis, MN

For additional information contact:

Program Chair—Ms. Susan Barnes, Mann Library, Cornell University, P.O. Box D, Ithaca, New York 14853

Phone: (607) 255-7957

E-Mail Address: SJB@Cornellc.Bitnet or SJB@Cornellc.CIT.Cornell.EDU.

phase III of the National Agricultural Text Digitizing Program, an activity of the text digitizing subcommittee of the USAIN Telecommunications and Networking Committee. In January 1991 in Chicago, John Beecher, USAIN Past President, reported on recent USAIN initiatives. The next USAIN update at ALA will take place on Tuesday afternoon, July 2, 1991, in Atlanta.

### Special Libraries Association

The Food, Agriculture, and Nutrition Division (FAN) of the Special Libraries Association hosted an informal information session on USAIN in its hospitality suite during its June meeting in Pittsburgh. Sarah Thomas, Associate Director for Technical Services at the National Agricultural Library, and NAL's liaison to USAIN, spoke briefly on USAIN's goals.

USAIN will be featured on a FAN breakfast program at SLA on June 11, 1991, in San Antonio.

### USAIN Committees

During 1990-1991, USAIN Committees were formed and met at the USAIN Program Meeting. Committees include Legislation and Governance, chaired by Elaine Albright, Director of Libraries, University of Maine; Telecommunications & Networking, chaired by Nancy Eaton, Dean of Library Services at Iowa State University; and Membership, chaired by Rita Fisher, Agricultural Science Specialist, Washington State University. USAIN Interest Groups at AGRICOLA, headed by Shirley Edwards, Head, Indexing Branch, NAL; Document Delivery, led by Eleanor Mathews, Head, Reference Department, Iowa State University; Cataloging; and Collection Development, chaired by Brice Hobrock, Dean of Libraries, Kansas State University.

### 1991 Program Meeting

The enthusiasm for the first USAIN Program Meeting has resulted in the planning for a second program meeting for October 14-16, 1991, in Minneapolis. Susan Barnes, Mann Library, Cornell University, is in charge of the Program Planning Committee. Centering on the theme of electronic agricultural libraries, USAIN '91, will include speakers on electronic resources; visions of the future, including cost implications, network access, federal data, equipment, user needs, and library-computing professional relations; NREN (the National Research and Education Network); and exhibits and demonstrations of commercial and publicly available products. The program meeting will be preceded by a preconference on preservation that will attempt to define a national strategy for the preservation of agricultural information.

### USAIN Initiatives for 1991

USAIN continues to gather momentum as an organization. During 1991, USAIN plans to:

- conduct its annual membership drive
- elect new officers and Council representatives
- publish and distribute a directory of members

- survey AGRICOLA users and make recommendations for improvements in the AGRICOLA database
- consider cooperative collection development opportunities for members
- offer testimony in support of the National Agricultural Library before the U.S. House Rural Development, Agriculture, and Related Agencies Subcommittee on Appropriations
- hold its second Program meeting at the University of Minnesota
- develop a strategy for the preservation of agricultural materials
- promote access to agricultural information through a network of librarians throughout the United States

## How to Join USAIN

If you would like to participate in USAIN, please complete the membership application form on the last page of this issue of *ALIN* and mail it to Doug Jones at the address indicated.



### News Notes

## NAL Gives Television Advice to Librarians in Developing Countries

by Brian Norris  
Public Affairs Officer, NAL

NAL Director Joseph Howard and Associate Director Sarah Thomas answered questions from special librarians in French-speaking African countries during a live call-in television program produced by the U.S. Information Agency (USIA) in Washington, D.C., on March 28.

Howard and Thomas were joined by Library of Congress librarian Cathy Jones to form a television panel which offered comments, suggestions, and recommendations for establishing special libraries to librarians in Kinshasa and Abidjan.

The television program was produced by USIA as part of an international seminar and workshop on special libraries in developing societies held in Abidjan, March 12-29, 1991.

During the video teleconference, the three-member panel was able to hear and respond to questions from librarians and information specialists in Kinshasa and Abidjan. Live television pictures of Howard, Thomas, and Jones





photo courtesy of Special Libraries Association

Cathy Jones of the Library of Congress (left) works with the videographer, while Sarah Thomas and Joseph Howard of NAL work with the Moderator, George Collinet of USIA (right), in preparation for the live broadcast/call-in program with French-speaking African librarians.

All three panel members strongly urged viewers of the teleconference to make use of new information management technology in developing collections, citing CD-ROMs particularly. Howard advised that whole collections of materials are available to newly established libraries relatively inexpensively on CD-ROM. The equipment needed to use CD-ROMs is also relatively inexpensive or perhaps can be donated to developing countries, Howard said.

Other subjects covered during the one-hour, question-and-answer program were: the importance of marketing library services to users; how document exchange agreements can be established with LC and NAL; the need for library training in developing countries; and acquisitions and cataloging.

While librarians and information specialists in Kinshasa and Abidjan were the only ones who could ask questions of Howard, Thomas, and Jones,

the program was broadcast live to the USIA's WORLDNET television system throughout Europe, Africa, the Middle East, and Asia.

## USDA Agencies Work to Improve Services to Researchers

The National Agricultural Library and the Agricultural Research Service (ARS) of the U.S. Department of Agriculture will work more closely to expand information services to agricultural researchers.

"Almost daily, changes are occurring in information management technology," said NAL Director Joseph H. Howard. "ARS and NAL have agreed to cooperate even closer so this technology can be put to use quickly in serving the nation's agricultural researchers."

In a letter of understanding signed by Howard and ARS Administrator Dr. R. Dean Plowman on March 20, NAL agreed to "oversee development of a coordinated network of information services, programs and products for ARS researchers." According to the two officials, NAL and ARS will develop information services that provide ARS libraries and research laboratories "access to NAL, land-grant university libraries and other information resources."

were broadcast via satellite to the participants in Africa. A translator was available to bridge the language gap.

"As one might expect, the bulk of the questions dealt with funding," Howard said. "Most questioners wanted to know what money was available to libraries in developing countries. I told the viewers that U.S. libraries, like libraries in developing countries, do not always get the funding we feel we need to do all that we want to do." During the program, Howard told viewers that to gain increased government funding "libraries need to prove their worth by providing good service."

Thomas, NAL's Associate Director for Technical Services, recommended to the teleconference participants that they seek alternative sources of funding such as grants and joint ventures. "NAL has enjoyed considerable success in gaining funding for special projects from universities, private companies and other sources," Thomas said. "Taken individually the amounts might not seem like much, but when added together they can form a considerable sum."

Howard also counselled that because of funding shortfalls facing libraries worldwide, countries need to form international coalitions to share library materials. "International networking among the world's libraries is needed," Howard said. "The sharing of materials, resources, and know-how will benefit all professional librarians."

Howard mentioned the International Association of Agricultural Information Specialists (called IAALD) as one group that facilitates this type of networking. The group is planning a conference of information specialists from French-speaking African countries in the near future.



photo: J. Swab

Dr. R. Dean Plowman, ARS Administrator (left), and Joseph H. Howard, NAL Director, sign the letter of understanding providing expanded library services to ARS researchers. Peggy Beavers, NAL coordinator for ARS Field Libraries (standing left), and Maria Pisa, NAL Assistant Director for Policy and Planning (standing center), worked out the NAL portion of the agreement. Others participating were Dr. William Tallent, ARS Cooperative Interactions Assistant Administrator, Robyn Frank, Head, NAL Information Centers Branch, and Keith Russell, NAL Associate Director for Public Services.

Howard said a major goal is "to ensure that researchers have access to accurate scientific information as swiftly as possible." That way, "discoveries in agricultural research can move ahead unabated in order to meet the ever-increasing demands for food and fiber in the world," he added.

"We want to continue to strengthen our working relationship with ARS," Howard said. "We will take advantage of information technologies, including electronic linkages, to expand services to federal researchers."

— Brian Norris



## Technology Applications

# Agricultural Reference Library on CD-ROM Available

An agricultural reference library on a 5-inch compact disc-read only memory (CD-ROM), developed in a joint project by the National Agricultural Library, Virginia Polytechnic Institute and State University (VPI), and the University of Minnesota, is now available for purchase from

VPI at \$99 for non-profit groups and \$199 for other groups and individuals.

Containing 75 major collections and handbooks representing 15,000 documents that equal 50,000 pages of information, the disc is called "The National CD-ROM Sampler: An Extension Reference Library." Information contained on the disc is from the U.S. Department of Agriculture, NAL, land-grant universities, and USDA's Extension Service.

"The initial pilot disc has been so valuable to USDA people in the field that we thought we'd make an updated version available through Virginia Tech at a minimal cost to other organizations," said Pam Andre, NAL Associate Director for Automation, who managed the project.

"It was expected that the original disc would assist Extension Service agents in responding to the thousands of questions they receive each year from farmers and others in rural areas. That expectation was met!" Andre said.

The USDA Extension Service has 16,000 workers at over 3,000 locations nationwide to handle the volume of questions. The sampler allows extension agents to answer frequently asked questions quickly and easily by calling up the desired information on a computer screen.

Copies of the prototype disc were sent to 115 extension service sites in March 1990 for testing and evaluation. "The disc performed very well," Andre said. "It was given high praise and many extension agents are now using it as a regular reference source."

In addition to the thousands of pages of information, the disc contains a full-text and image retrieval software, called **re:Search**, for quick and easy document search and retrieval and an on-line **re:Search** instruction manual, a "hints" section and help messages.

According to Andre, a particularly attractive feature of the disc is the *Who's Who in Great Plains Songbirds* collection, which includes not only full-color graphics of 20 birds with on-screen summaries but also the birds' calls and songs. To use this feature an audio amplifier must be attached to the CD-ROM player.

To take maximum advantage of the disc's graphics, audio, printouts and text search and retrieval speed, Andre recommended a CD-ROM player attached to a 386 computer, an EGA monitor, audio amplifier and speakers, and HP laserjet or deskjet printer. Basic hardware needed to run the disc and access only the text information are a CD-ROM player attached to an XT-class computer with hard drive and monochrome monitor.

The disc can be ordered from:

*Interactive Design and Development  
Virginia Tech  
Plaza I, Building D  
Blacksburg, VA 24061-0524*

Money orders, checks and purchase orders should be made to "Virginia Tech Intellectual Properties."

— Brian Norris



## New CD-ROM Series from CAB International

CAB International, publisher of the CAB ABSTRACTS database and the related series of abstract journals, is pleased to announce the start of a new CD-ROM publishing venture designed to make the world's agriculture and related research information more widely accessible than ever before.

The introduction of CAB SPECTRUM, an array of subject-specific CD-ROMs, marks a new era for CAB International (CABI). Having gained international renown over the past 60 years for its range of printed abstract journals, CABI is now ready to enhance that reputation by taking a leading role in the supply of agricultural and related research information on CD-ROM. This move confirms CABI's commitment to provide information to the international scientific community, in the most convenient and cost-effective forms possible.

Each disc in the CAB SPECTRUM series will be a comprehensive source of information for a particular discipline. By focusing on specific areas of importance, many more years of data can be incorporated onto a single disc.

The first specialty discs in this series will be VETCD and BEASTCD, the former covering veterinary science and animal health, and the latter covering animal production and dairy technology. Both discs will cover the time period 1973-1990, and will be updated annually.

TREECD will follow by the end of 1991, covering over 50 years of forestry information, with annual updates. The data for these discs are derived from the CAB ABSTRACTS database from 1973 and the corresponding printed abstract journals for the years prior to 1973.

State-of-the-art optical character recognition scanning technology is being utilized to convert the older printed information into electronic form. CABI plans to extend CAB SPECTRUM over the next few years with at least another three specialty CD-ROMs planned for 1992.

CABI firmly believes that CD-ROM is the medium of the future, and that it is especially valuable for providing developing countries with access to the world's ever expanding volume of literature. This belief is supported by the United Kingdom's Overseas Development Administration which is sponsoring the production of the TREECD. CABI is actively seeking collaboration with interested organizations to facilitate the production and distribution of other specialty CD-ROMs for several disciplines.

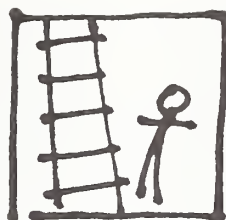
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— CAB International



**Youth  
Development**

## Database Lists National Youth Information

For any person planning a program to help young people, a call to the National Agricultural Library in Beltsville, Maryland, might be a good place to start. A computerized service listing hundreds of sources of information on youth development programs and on research and knowledge about America's youth is available from NAL free of charge. The service is a program of the Extension Service of the U.S. Department of Agriculture, which provides NAL with the resources to maintain the database.

Called the 4-H Professional Research and Knowledge Base (4HPRK), the database is part of NAL's Youth Development Information Center (YDIC). YDIC is supported by the Extension Service's 4-H program and NAL. "The service we are developing offers one-stop shopping for those interested in youth development," said YDIC Coordinator John Kane. "We intend that this will be a complete listing of youth development programs, research, and knowledge."

4HPRK identifies and specifies articles, studies, audio-visuals, and other materials on youth development from throughout the United States. The database includes abstracts and information on where materials can be obtained. Many of the materials are available at NAL.

Kane, who earned his Ph.D. in rural community development at the University of Maryland and is a Naval Academy graduate, said the database can help youth program coordinators from all segments of society and not just those in farming areas. "It's not an agricultural database," Kane said. "It is concerned with the problems facing all youth today and not only with problems facing rural youth. The emphasis is on youth-at-risk. For example, we recently developed for a client a bibliography of information on violence among minority youths in inner city areas."

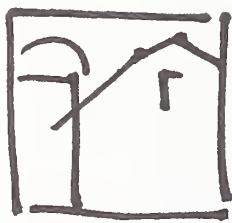
Kane said, "The bibliographies produced by the center through the database are tailored to include only information related to a subject specified by a person making a request. Consequently, the person is spared hours and perhaps days of fruitless searching."

The 4HPRK database service is available Monday through Friday, between 8:30 a.m. and 4 p.m., Eastern Time. YDIC can be reached by dialing (301) 344-3719. A telefax can be sent to (301) 344-5472.

Kane said that 4HPRK can also be accessed through NAL's electronic bulletin board, ALF (Agricultural Library Forum). Information on making that connection is available by contacting Kane at his office.

— Brian Norris





**Alternative  
Farming  
Systems**

## AFSIC's Use of the Video Medium

by Jayne T. MacLean  
Coordinator, Alternative Farming  
Systems Information Center

We often hear ourselves referred to as the "TV Generation." Television and videotape have transformed the way information is communicated, and libraries have had to accommodate to these changes. NAL regularly adds to its collections many types of non-print media, including film strips, audiotapes and videotapes dealing with all the diverse aspects of agriculture.

The Alternative Farming Systems Information Center (AFSIC) has adopted the video medium as a means of conveying the message of sustainable agriculture. AFSIC's mission is to provide information from NAL's resources to farmers and others in the agricultural community. In the Congressional Acts which funded the USDA Sustainable Agriculture Program were provisions both for research and for dissemination of the research results to farmers "in readily usable form." What could make information more easily accessible than the video format?

USDA Office of Public Affairs (OPA) has featured Jayne MacLean in videotapes about alternative agriculture and about the Information Center, the latter of which was broadcast on the Department's satellite uplink. A 13-minute radio interview in which the work of the Center was described was also made available by the OPA to radio stations around the country.

AFSIC has chosen to make use of the advantages offered by video for the dual purposes of current viewing and archival preservation. A series of oral history interviews with key people in the field of sustainable or alternative agriculture is being produced. Jane Gates brings to bear her training and experience at interviewing to lead her guests through the on-camera interviews, while Jayne MacLean handles production and arrangements. The talents

of several different videographers have been used, including Ron Hamilton, of the USDA Video and Teleconference Division, who created the generic footage that introduces each of the oral history interviews and who has often served as cameraman and editor.

The series consists of eight videocassettes completed so far. Copies are stored in the NAL stacks for borrowing through the interlibrary loan system, the same way books are borrowed. One of the most frequently borrowed cassettes is the interview with Robert Rodale, late President of Rodale Press, who was killed in a tragic car accident less than a year after the interview was done. Two of the subjects are the key administrators of the USDA sustainable agriculture research and education program that has been called LISA,



photo: J. Swab

Patrick O'Leary (right) of USDA's Office of Public Affairs directs filming of AFSIC activities for a satellite broadcast. While videographer Ron Anderson films, Jayne MacLean demonstrates the AGRICOLA database to find materials on alternative farming systems.



photo: J. Swab

Ron Hamilton of USDA's Video & Teleconference Division, Office of Public Affairs, films Jane Gates (standing) and Jayne MacLean as they do the generic introduction for the AFSIC oral histories videotapes.





photo: J. Swab

Ronald Young (right), Audio/Visual Information Specialist, Special Collections, NAL, finishes videotaping the oral history interview of J. Patrick Madden by Jane Gates (left) and Jayne MacLean, Coordinator of NAL's Alternative Farming Systems Information Center.

but is now being referred to simply as the Sustainable Agriculture Program. They provided excellent background on the beginnings of this uniquely structured and managed program.

All of the interviewees have been influential in the movement toward more environmentally benign farming systems, either by writings or speeches or by example. One is a multi-faceted USDA economic botanist; two others are philosopher/educators. A truism is that farmers learn best from other farmers, and AFSIC is pleased to have videotaped talks with two farmers who have advanced the spread of knowledge of sustainable farming techniques, both by successfully using them and by demonstrating them to others.

## J. Patrick Madden Oral History Videotaped

While Dr. Madden was at NAL for a meeting relating to development of a sustainable agriculture information network, AFSIC staff asked him to take time from his busy schedule for a videotaped interview. Patrick Madden was a professor at Pennsylvania State University who was brought in to USDA/CSRS to help create and manage the Low Input/Sustainable Agriculture (LISA) program. His knowledge, skill, and enthusiasm contributed mightily to the early success of the program, and continue to keep it on track. A particular concern of Dr. Madden is the formation of an information network that will utilize all appropriate methods of communication to provide effective access to information about sustainable agriculture.



photo: J. Swab

J. Patrick Madden



photo: J. MacLean

Jane Gates conducts the oral history interview with Richard Thompson while Kent Hofmeister, contract videographer with Iowa State University, does the filming in the Thompson home.

## AFSIC Interviews Thompson in Iowa

The snow-dusted fields of black Iowa soil were flat and wind-swept when Jane Gates and Jayne MacLean visited the farm of Richard and Sharon Thompson in Boone, Iowa, in February. A videographer borrowed from nearby Iowa State University did the camera work as Jane talked with Dick Thompson. This farm is well-known, especially to readers of *The New Farm* magazine, for its on-farm research programs, and the Field Days it offers several times a year to demonstrate its techniques and spread the message of sustainable farming. Mr. Thompson is especially noted for his experiments with ridge tillage for non-chemical weed control, and is largely responsible for its increasing adoption.

Gates and MacLean were in Iowa to attend a conference in Ames sponsored by the Leopold Center for Sustainable Agriculture. The conference dealt with many of the same methods, techniques, and concerns that were discussed next day during the interview with Mr. Thompson. While in

Ames, the AFSIC staff members also toured the first class Parks Library at the University, and the new USDA Soil Tilth Laboratory, which is working toward solving many "underground" questions critical to sustainable agriculture.

### Borrowing AFSIC Oral Histories

Videotapes available to borrow (all are in VHS format) include oral history interviews with:

James A. Duke, NAL call no. Videocassette #629  
Charles A. Francis, NAL call no. Videocassette #876  
Wes Jackson, NAL call no. Videocassette #731  
Fred Kirschenmann, NAL call no. Videocassette #877  
James Patrick Madden, NAL cataloging in process  
Paul F. O'Connell, NAL call no. Videocassette #732  
Robert Rodale, NAL call no. Videocassette #670  
Dick Thompson, NAL cataloging in process

For information on borrowing the videocassettes, contact either Jayne MacLean, (301) 344-3724, or Jane Gates, (301) 344-3559.





The Thompson farm at Boone, Iowa.

photo: J. MacLean



photo courtesy R. Thompson

Richard Thompson

## Folklife Festival Wants You

Remember the Folklife Festival that sprouts on the Mall outside USDA's Administration Building in Washington, DC, each summer?

This year you can do more than watch the entertainment and sample the ethnic food. For the 25th Annual Folklife Festival, June 28-July 7, USDA employees and others can share in the fun and be part of the "behind-the-scenes" force making it all happen.

That's because USDA is co-sponsoring with the Smithsonian "Family Farming in the Heartland," one of three festival themes this year. Over 100 farmers and crafts people from 12 Midwestern states are coming to Washington to be part of the Festival. Demonstrations ranging from cooking to quilting to threshing machines will illustrate the cultural importance and significance of family farming.

Susan Nelson, USDA's director of the Folklife Festival, says volunteers are needed starting in mid-June and continuing through the end of the Festival. They can volunteer during their off-duty hours or on weekends for at least a half-day at a time. Family members can volunteer to help too, as well as field employees who happen to be on vacation in Washington at the time.

Activities may include anything from constructing exhibits before the Festival starts, to selling lemonade during the Festival, to helping the Festival participants themselves.

So if you want to be part of the Folklife Festival this year, call Sue on (202) 447-7226 for more information on how to volunteer. Sue and the Smithsonian will appreciate your help.



## Food & Nutrition



(Above) Dr. Meena Somanchi, a volunteer with FNIC during winter 1991, prepares abstracts of nutrition materials for the AGRICOLA database. Dr. Somanchi is a biochemist and nutritionist who has recently come to the United States.



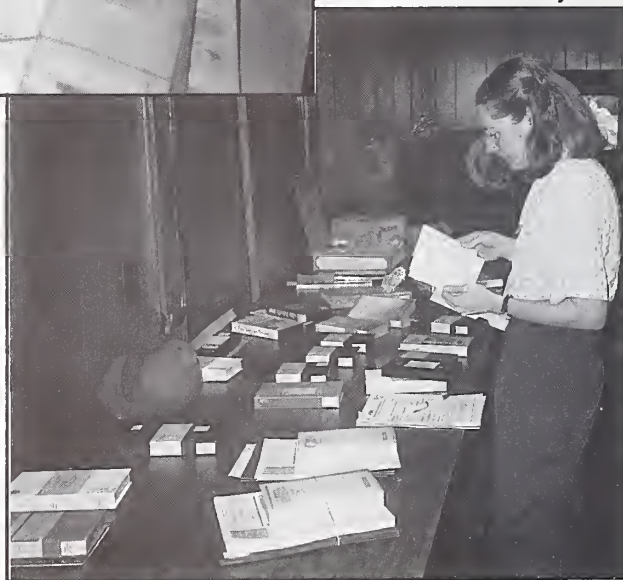
(Below) Connie Betterley, nutritionist with the Iowa Department of Health WIC program, looks through the wide variety of nutrition-related educational materials on display during the open house at NAL. Visitors from across the country took the opportunity to learn about the reference and lending services provided by the Food and Nutrition Information Center at the Library.

### FNIC Open House for WIC Directors

(Top) Food and Nutrition Information Center (FNIC) nutritionists Shirley King Evans (left) and Natalie Updegrave (right) assist Penny Rieley (center), nutritionist with the Women's, Infant's, and Children's program (WIC) in the Vermont Department of Health as she previews an educational videotape from the NAL's food and nutrition collection. Nutritionists who participated in the National Association of WIC Directors Annual Conference in Washington, DC, visited NAL during an open house where staff demonstrated AGRICOLA and nutrition-related software, and provided educational materials for review.

(Above) Part of the large display of educational materials for the educators to review during their brief visit to NAL.

— photos and captions by Sandy Facinoli







## Staff Update

### Keen Is NAL Facilities Manager



photo: J. Swab

Clarence Keen

The National Agricultural Library has appointed Clarence Keen as the new facilities manager. In this position Mr. Keen is responsible for all NAL Building systems including electrical, telephone, heating and air conditioning, plumbing, etc., for security, disaster control, building maintenance, and janitorial services, parking and grounds maintenance, mail and moving services, and so forth. These services are operated through contracts with private sector

businesses and coordination with servicing units of the Agricultural Research Service in the Beltsville area and other government agencies.

Mr. Keen joins the NAL staff after 23 years of government service. All but four of those years were with USDA's Agricultural Research Service where he started out as a clerk in the ARS General Service Section in 1967 before having a time-out for four years in the U.S. Air Force between 1968 and 1972. That tour of duty took him to nearly all of the Air Force bases of the western Pacific including those in Thailand, Viet Nam, the Philippines, Guam, Japan, and Hawaii, where he performed aircraft maintenance. He returned to the ARS warehouse in 1972, and by volunteering for duties and training which no one else wanted, rapidly gained the experience which earned him promotion to supervisor of the warehouse in 1974. There he was instrumental in modernizing warehouse operations and automated inventory control and supply services. In 1988 he became the Beltsville Area Property Manager for ARS where he remained until assuming his present position on March 20, 1991.

A native of Florida, Mr. Keen is a graduate of Lincoln Business College in Jacksonville, and he earned an Associate Degree in Management at Prince Georges Community Col-

lege, Maryland. Other academic work besides that related to his employment has been devoted to drafting and art. Mr. Keen is a painter, using a variety of media—oils, watercolors, acrylics—on a variety of surfaces from paper to plexiglass. He also writes poetry. Mr. Keen is married and has a son, 17, and a daughter, 13. He has received a number of performance awards throughout his career, and served on the ARS Beltsville Area Black History Committee for three years in the 80's.

—Joseph N. Swab

### Vera Junger Retires



photo courtesy V. Junger

Vera Junger

Vera was born in Prague, Czechoslovakia, and lived in and around the city most of her life before coming to the United States. She grew up with one sister and always enjoyed outdoor activities. One canoe trip was particularly memorable—she met her future husband. They both attended Charles University in Prague where she earned her degree in pharmacy and her husband became a physician.

She worked in her father's pharmacy until it was national-

ized in 1948. Then she started working at an information center for the pharmaceutical industry at a research institute in Prague. After the Soviet invasion in 1968, Vera managed to get to Italy, then to the United States. In 1970, six weeks after her arrival, she started indexing for an NIH contractor.

Eight years later, Vera came to work at the National Agricultural Library Indexing Section. Here her facility in languages, as well as her knowledge of organic chemistry and pharmaceuticals, was invaluable. In addition to Czech and English, she speaks French, German, Italian, and Serbo-Croatian, and also understands Polish. At NAL, she indexed medical and biochemical journals.

Vera's proficiency in languages is useful on her trips to Europe, where she likes to travel and ski. She is an enthusiastic swimmer, having swum competitively in her youth. Her best stroke is the freestyle. She also makes good strokes in tennis, which she describes as one of her main hobbies. Art is another life-long interest which Vera hopes to pursue in her retirement. She is active in the local Czech community. She is also planning to do small contract jobs such as one already completed since leaving NAL, that is, indexing for a National Cancer Institute contractor, only one Metro stop away from her Rockville home.

—Judith Torgerson



# Black History Month



photos: J. Swab

The Black History Month activities at the National Agricultural Library in February included several programs, exhibits, and film showings. Among the programs were the "Images of Influence" program reported in the January issue of *ALIN*. Another program sponsored jointly by the National Agricultural Library and the Agricultural Research Service (ARS) in the Beltsville area was "Adults As Role Models, A Workshop." The workshop was conducted by Dr. Muriel Gray, of the Employee Assistance Program, ARS. Dr. Gray spoke on kinds of positive and negative attributes of role models, direct and indirect influences of role models, and ideal things that people should do as role models. She had each of the participants think of persons who exemplified such attributes, list their individual characteristics, and then

discuss them in discussion groups. Later Dr. Gray had the participants think of two young persons whom they would like to influence, identify the characteristics they would like to exhibit as role



models, and then discuss these ideals. The workshop was followed by entertainment. The program was planned by Tanya Tanner, Special Emphasis Programs Manager for Black Programs, and the ARS-BARC Black History Program Sub-Committee.

(Above) Dr. Muriel Gray.

(Above left) The George Washington Carver Exhibit for Black History Month prepared by Tanya Tanner.

(Below left) Marjorie Douglas (left) of Sparkle Unlimited, Inc., which provided the entertainment, and Vallie Bray, Special Emphasis Program (SEP) Co-Manager, ARS, and Biological Laboratory Technician—Microbiology.

(Below) A group of young dancers from Sparkle Unlimited performing for the NAL/ARS audience.

Black History Month programs are part of a year-round series of cultural heritage observances which also foster equal employment opportunity and civil rights awareness.





# African Americans Pictured on U.S. Postage Stamps

William P. Wergin

## THE BLACK HERITAGE SERIES

### Black Heritage Series

The Postal Service initiated a series of stamps to honor the Black Heritage Series.

It depicted Harriet Tubman, was issued on the opening day of the Black History Month. Harriet Tubman was one of the great figures of the American South. Since that time, stamps have been issued each year, frequently with Black History Month. In 1990, the Postal Service issued a stamp to honor the first day of issue for the 1991 stamp. The stamp will honor Jan. 1, the first day of issue for the 1991 stamp.

first day of issue cancellations, it does not produce or supply the envelopes bearing cachets. These are provided by commercial companies, and even individuals, who design the cachets or personal cachets. The cachets on the First Day Covers displayed in this exhibit were produced by several different commercial firms.

"Souvenir Pages" are issued only by the U. S. Postal Service. They are printed on the colorful 8" x 10.5" sheets contained in this display. The Souvenir Pages, like the First Day Covers, also contain the first day of issue cancellation that is applied to the stamp, a brief description of the significance or background of the stamp and facts and technical data about the issue. This information usually consists of the designer, modeler, engraver and other printing information.

"Commemorative Panels", like Souvenir Pages, are issued only by the U. S. Postal Service. The panels consist of 8 1/2" x 11" high quality paper stock. Each panel features a block of four unused (mint) stamps, hand engravings (many of which are centuries old) and a historical narrative especially written for the stamp.

Souvenir pages and Commemorative Panels are issued only by the U. S. Postal Service, therefore only the single design shown in this exhibit exists for these items. However, because the cachets on First Day Covers are produced by different companies, there are many variations.

### OTHER STAMPS WITH AFRICAN AMERICAN

The Black Heritage Series is the only for stamps depicting African Americans that has been issued by the U. S. Postal Service, however, through the other single stamps have been issued that illustrate specific or anonymous individuals. For example, stamps commemorating the Olympic Games illustrate African Americans. Because living individuals cannot be on U. S. stamps, only one of these issues depicts a person, four time gold medal winner, Jesse Owens. These events include boxing, basketball, gymnastics, etc. Other anonymous African Americans portrayed on stamps that were issued in the 1950s and 1960s include American youth and athletes.

About nine other issues illustrate African Americans. These include Booker T. Washington, Washington Carver, William C. Handy, V. P. Past, Charles R. Drew, Ralph Bunche, Matthew Henson. A few items that illustrate stamps have been included in this display.

For those who may be interested in stamps and their dates of issue, the "single design" is used with some designs. Other examples may exist. If so, please bring them to the exhibit.

## NAL Annual Reports Available

The National Agricultural Library announces the availability of a limited number of copies of its *Annual Report for 1989*, and its *Annual Report for 1990*.

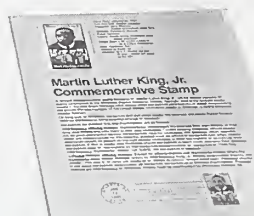
The 28-page report for 1989 was published in December 1990 and includes selected statistics and a paragraph highlighting each of the Library's major projects and programs for the year.

The 35-page report for 1990 has just been published in April 1991 and updates ongoing projects and programs, and it reports on initiatives for the year.

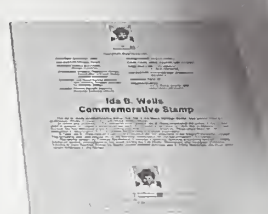
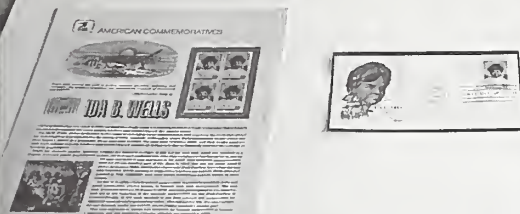
To obtain a copy of either or both reports while supplies last, send a request with a self-addressed label to:

Shirley Evans, Secretary  
Public Affairs, Room 204  
National Agricultural Library  
10301 Baltimore Boulevard  
Beltsville, Maryland 20705-2351

## Dr. Martin Luther King, Jr. Civil Rights Leader 1929-1968



## Ida Bell Wells Journalist 1862-1931



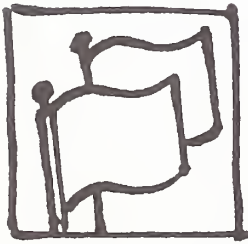
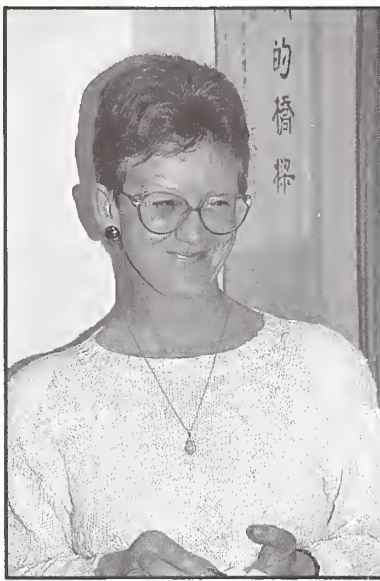
Three panels of the exhibit "African Americans Pictured on U. S. Postage Stamps" created by Dr. William P. Wergin, Research Leader, Natural Resources Institute, Electron Microscopy Lab, ARS. The exhibit was located in the Special Collections exhibit area of the National Agricultural Library's lobby (see the box at right for a list of Black Americans included in the exhibit) as a part of the NAL and ARS observance of Black History Month.

## Black Heritage Series of U.S. Stamps

Harriet Tubman (c.1821-1913), Abolitionist; Martin Luther King, Jr. (1929-1968), Civil Rights Leader; Benjamin Banneker (1731-1806), Astronomer & Mathematician; Whitney Moore Young (1921-1971), Civil Rights Leader; Jackie Robinson (1919-1972), Athlete - Baseball; Scott Joplin (1868-1917), Musician - Composer; Carter Godwin Woodson (1875-1950), Writer; Mary McLeod Bethune (1875-1955), Educator; Sojourner Truth (1797-1883), Abolitionist, Women's Suffrage; Jean Baptiste Pointe Du Sable (c. 1750-1818), Founder of Chicago; James Weldon Johnson (1871-1938), Author & Lyricist; Asa Philip Randolph (1889-1979), Labor Rights Leader; and Ida B. Wells (1862-1931), Journalist.

The exhibit at NAL also included other blacks on U.S. stamps.





## Visitors

Among the visitors who came to NAL in the final quarter of 1990 to discuss the Library's ongoing international programs were (above L-R) Pat Thompson, of the International Development Research Center, Ottawa, Canada; Helena Sleřáková, Institute of Scientific and Technical Information for Agriculture, Czechoslovakia; Ragaa Abdel-Hady, Egyptian National Agricultural Library, Cairo, Egypt; and (right) Ms. V. Buchneva and Vyacheslav G. Pozdnyakov, Central Scientific Agricultural Library, All-Union Lenin Academy of Agricultural Sciences, USSR.

They met with the senior staff of the National Agricultural Library, discussing a variety of projects and technologies. Following a reception with the Library staff, they met with (below L-R) Keith Russell, Associate Director for Public Services; Pam Andre, Associate Director for Automation; Ms. Buchneva; Mr. Pozdnyakov; Joseph H. Howard, Director; Ms. Sleřáková; Ms. Thompson; Ms. Abdel-Hady; and Sarah Thomas, Associate Director for Technical Services.

Their visits also included demonstrations of the Library's database, integrated system, electronic bulletin board, text digitizing, CD-ROMs, laser video discs, expert systems, and other new technology applications.



photos: J. Swab







## New Serials Received at NAL

*Advances in Lectin Research.* Berlin; New York: Springer-Verlag. Vol. 1- [c1988]-  
**QP552.L42A2**

*AFPC Policy Issues Paper / Agricultural and Food Policy Center, Department of Agricultural Economics, Texas Agricultural Experiment Station, Texas Agricultural Extension Service, Texas A&M University.* College Station, TX: The Center. Irregular. 89-1-  
**HD1751.A38**

*AFPC Policy Research Report / Agricultural and Food Policy Center, Department of Agricultural Economics, Texas Agricultural Experiment Station, Texas Agricultural Extension Service, Texas A&M University.* College Station, TX: The Center. Irregular. 89-1-  
**HD1751.A37**

*The Agriculture Quarterly / The Oregon Department of Agriculture.* Salem, OR: The Department. Quarterly. Issue 294 (Winter 1988)-  
**S451.O7A4**

*Annual Report / Land Resource Science.* [Guelph, Ont.]: University of Guelph. Annual. 1985-  
**S591.55.C34O5**

*Annual Review of the New Zealand Sheep and Beef Industry / NZ Meat & Wool Boards' Economic Service.* Wellington: The Service. Annual. 1985-86-  
**HD9436.N45A55**

*AQIS Bulletin.* Canberra: Published for the Australian Quarantine and Inspection Service, Dept. of Primary Industries and Energy by the Australian Govt. Publ. Service. Monthly (except Jan.) Vol. 1, no. 1 (Sept. 1989)-  
**HD9000.9.A8A84**

*Bamboo Abstracts.* Beijing, China: Bamboo Information Centre, Chinese Academy of Forestry. Semiannual. Vol. 1, no. 1- [1988]-  
**SB317.B2B35**

*Catfish and Aquaculture News.* Ridgeland, MS: HOTT, Inc. Monthly. Vol. 5, no. 1 (late summer 1990)-  
**SH167.C35C37**

*Community Transportation Reporter.* Washington, DC: Rural America, Center for Community Transportation. Monthly, 19Z- Vol. 5, no. 2 (Feb. 1987)-  
**HE308.C6**

*Cuadernos da área de ciencias maríñas.* Sada, A Coruña: Edicións do Castro. Irregular. 1- [c1984]-  
**GC1.C83**

*Dairy Herd Workshop.* Minnetonka, MN: Miller Pub. Co. Semiannual. Vol. 1, no. 1 (Mar. 15, 1990)-  
**SF221.D25**

*DNA and Protein Engineering Techniques.* New York, NY: Alan R. Liss. Six no. a year. 19Z- Vol. 1, no. 1 (Jan.-Feb. 1988)-  
**QP624.D5**

*Economic Fact Sheet.* [Honolulu]: Dept. of Agricultural and Resource Economics, College of Tropical Agriculture and Human Resources, University of Hawaii. Irregular. 1- [1989]-  
**HD1775.H3E26**

*Environmental History Review: EHR: A Publication of the American Society for Environmental History.* Newark, NJ: New Jersey Institute of Technology. Quarterly. Vol. 14, nos. 1-2 (spring/summer 1990)-  
**Q125.E5**

*Environmental Technology.* London: Publications Division, Selper Ltd. Monthly. Vol. 11, no. 1 (Jan. 1990)-  
**TD1.E59**

*FFTC Book Series.* Taipei, Taiwan: Food and Fertilizer Technology Center. Irregular. No. 1- [1978]-  
**SB177.A75F47**

*Future Choices: Toward a National Youth Policy.* Washington, DC: Youth Policy Institute. Three issues yearly. Premier ed. (Spring 1989)-  
**HQ796.F8**

*ICID Bibliography: Irrigation, Drainage and Flood Control = Bibliographie CIID: irrigation, drainage et maitrise des crues.* New Delhi, India: International Commission on Irrigation and Drainage. Annual. No. 30 (1985)-  
**Z5074.I715**

*Indian Journal of Fibre & Textile Research.* New Delhi: Publications & Information Directorate, CSIR. Quarterly. Vol. 15, no. 1 (Mar. 1990)-  
**TS1473.I5I53**

*Information Industry Directory.* Detroit, MI: Gale Research. Annual. 11th ed. (1991)-  
**Z674.3.U5E5**

*Inhalation Toxicology.* New York, NY: Hemisphere Pub. Corp. Quarterly. Vol. 1, no. 1 (Winter 1989)-  
**RA1199.4.A54I53**

*Journal / American Holistic Veterinary Medical Association.* Bel Air, MD: The Association. Quarterly. Vol. 8, no. 2 (May-July 1989)-  
**SF601.N48**

*Kal Kan Forum*. Vernon, CA: Kal Kan Foods. Quarterly. Vol. 7, no. 1- [c1988]-  
**SF981.F67**

*Land Degradation & Rehabilitation*. Chichester, England: Wiley. Quarterly. Vol. 1, no. 1 (July-Aug. 1989)-  
**S622.L26**

*Macro-Economic Outlook*. The Hague: Central Planning Bureau. Annual. 1988-  
**HC321.A25**

*Management Quarterly: MQ*. Washington, DC: Management Services Dept., National Rural Electric Cooperative Association. Quarterly. Vol. 1, no. 1 (Summer 1960)-  
**HF5549.A2M35**

*Mountain, Plain and Garden: The Magazine of Denver Botanic Gardens*. Denver, CO: The Gardens. Semiannual. Vol. 47, no. 1 (Spring/Summer 1990)-  
**SB469.M6**

*Nungyeh tu shu ching pao hsueh kan = Journal of Library and Information Sciences in Agriculture*. Pei-ching: Chung-kuo nung ko yuan ko chi wen hsien hsin hsi chung hsin. Bimonthly. 1989, 1-  
**Z675.A8N95**

*Rapport / Sveriges lantbruksuniversitet, Institutionen för vitekologi = Report / Swedish University of Agricultural Sciences, Department of Wildlife Ecology*. Uppsala: Institutionen. 1 (1980)-  
**SD77.S758**

*Rubber News*. Bombay, India: Polymer Publications. Monthly. Vol. 1, (Oct. 1961)-  
**TS1885.I4R82**

*Science du sol: bulletin de l'Association française pour l'étude du sol / AFES*. [Plaisir-France]: l'Association. Four no. a year. 1984, no. 1-  
**S590.A83**

*Svensk lantbruksbibliografi*. Uppsala: Sveriges lantbruksuniversitets bibliotek. Annual. 1983-  
**Z5075.S8S93**  
*Thomas Food Industry Register*. New York, NY: Thomas Pub. Co. Annual. 1990-1991 ed.-  
**HD9321.3.T5**

*Top Producer*. Philadelphia, PA: Farm Journal, Inc. 12 no. a year. 1990- Vol. 3, no. 2 (Feb. 1986)-  
**HD1751.T6**

*Trudy Ukrainskogo Regionalnogo nauchno-issledovatel'skogo gidrometeorologicheskogo instituta*. Moskva: Moskovskoe otd-nie gidrometeorizdata. Irregular. Vyp. 227- [1988]-  
**GB651.T79**

*Wageningen Agricultural University Papers*. Wageningen:

The University. Irregular. 89-1-  
**S539.5.A35**



**Publications  
Exchange**

## Surplus Publications

The National Agricultural Library will make available the following surplus publications to any interested organization that regularly sends free publications to NAL, including most Federal, land-grant, and agricultural research institutions as well as many others. Foreign institutions will need to provide a U.S. mailing address or make other special arrangements with U.S. sources for shipment of material. Listed titles may be requested up to six months following announcement.

If interested, please enclose an addressed label with your request and write to:

National Agricultural Library  
Attn: Gift and Exchange/RF, Room 002  
10301 Baltimore Boulevard  
Beltsville, MD 20705-2351

Or call Ruth Finnblade, (301) 344-4061.

*Agronomy Journal*. Vol. 69-71, 74-79, 1977-87.

*Economic Botany*. Vol. 28-32, 1965-79.

*Euphytica*. Netherlands Journal of Plant Breeding. Vol. 7-11, 1958-62.

*Evolution*. International Journal of Organic Evolution. Vol. 34-40, 1979-88.

*Journal of Political Economy*. Vol. 86-91, 1978-82.

*Pesticides Documentation Bulletin*. Vol. 1-14, 1965-81.

## Serial Gaps

The National Agricultural Library identifies gaps in the national collection through collection maintenance activities and patron requests. We appreciate your donation of the following publications needed to complete collections. If you have questions, call Ruth Finnblade, Gift and Exchange Program, (301) 344-4061.

Send items to:

National Agricultural Library  
Gift and Exchange Program/RF, Room 002G  
10301 Baltimore Boulevard  
Beltsville, MD 20705-2351



*L'Agriculateur Normand*. 1973, No. 238; 1975, No. 300, 304, 318-319, 342; 1976, No. 349, 368, 375; 1977, No. 400, 403, 443-444, 493; 1979, No. 537-538; 1980, No. 550, 575; 1982, No. 649-655, 667; 1983, No. 709; 1984, No. 763; 1988, No. 973; 1989, No. 1004-1005; 1990, No. 1084.

*American Horticulturalist*. Vol. 69, No. 1 & 3, 1990.

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*Proceedings of the North Central Weed Control Conference*. 1983.



## New Bibliographies

### Quick Bibliographies

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**Q.B.—91-64.** Breeding for Heat- and Drought-Tolerant Plants, January 1980-December 1990. 168 citations; languages: none excluded. Prepared by Susan C. Whitmore. D.C. Reference Center. April 1991.

**Q.B.—91-65.** Climate and Insect Pests, January 1980-December 1990. 219 citations; languages: English only. Prepared by Susan C. Whitmore. D.C. Reference Center. April 1991.

**Q.B.—91-66.** Climate and Forestry Production, January 1980-December 1990. 180 citations; languages: none excluded. Prepared by Susan C. Whitmore. D.C. Reference Center. April 1991.

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**Q.B.—91-69.** Climate and Cattle Production, January 1980-December 1990. 74 citations; languages: none excluded. Prepared by Susan C. Whitmore. D.C. Reference Center. April 1991.

**Q.B.—91-70.** IPM and Biological Control of Weeds, January 1989-December 1990. 259 citations; languages: English only. Prepared by Jayne T. MacLean. Alternative Farming Systems Information Center. April 1991. Updates Q.B. 90-51.

**Q.B.—91-71.** Forest Products Exports, January 1980-December 1990. 255 citations; languages: none excluded. Prepared by Mary E. Lassanyi. Agricultural Trade & Marketing Information Center. April 1991. Updates Q.B. 88-35.

**Q.B.—91-72.** Raising Quail, Partridge, Pheasant, Bobwhites, and Ostriches, January 1987-January 1991. 204 citations; languages: none excluded. Prepared by Jean A. Larson. Animal Welfare Information Center. April 1991. Updates Q.B. 89-95.

**Q.B.—91-73.** PST - Porcine Growth Hormone, January 1979-January 1991. 156 citations; languages: none excluded. Prepared by Jean A. Larson. Animal Welfare Information Center. April 1991. Updates Q.B. 89-29.

**Q.B.—91-74.** Fish Oil: Role of Omega-3s in Health and Nutrition, January 1979-December 1990. 210 citations; languages: none excluded. Prepared by Deborah T. Hanfman, Aquaculture Information Center and Sandra L. Facinoli, Food and Nutrition Information Center. April 1991.

**Q.B.—91-75.** BST—Bovine Somatotropin/Growth Hormone, January 1986-December 1990. 259 citations; languages: none excluded. Prepared by Jean A. Larson. Animal Welfare Information Center. April 1991. Updates Q.B. 90-16.

**Q.B.—91-76.** Food Service: Printed Materials and Audiovisuals. Printed materials: January 1987-March 1991; Audiovisuals: January 1980-March 1991. 221 citations; languages: none excluded. Prepared by Rebecca Thompson. Food and Nutrition Information Center. April 1991. Updates Q.B. 89-72.

**Q.B.—91-77.** Biotechnology: Patenting Issues, January 1979-December 1990. 91 citations; languages: none excluded. Prepared by Robert D. Warmbrodt. Biotechnology Information Center. April 1991. Updates Q.B. 90-23.

**Q.B.—91-78.** Sewage Sludge in Agriculture, January 1983-January 1991. 337 citations; languages: English only. Prepared by Jayne T. MacLean. Alternative Farming Systems Information Center. April 1991. Updates Q.B. 83-45.

**Q.B.—91-79.** Biotechnology: Risk Assessment, January 1986-February 1991. 152 citations; languages: none excluded. Prepared by Robert D. Warmbrodt. Biotechnology Information Center. April 1991. Updates Q.B. 86-64.

**Q.B.—91-80.** Biotechnology: Legislation and Regulation, January 1979-February 1991. 242 citations; languages: none excluded. Prepared by Robert D. Warmbrodt. Biotechnology Information Center. April 1991.

**Q.B.—91-81.** Biotechnology: Plant Protection from Viruses, November 1988-March 1991. 183 citations; languages: none excluded. Prepared by Robert D. Warmbrodt. Biotechnology Information Center. April 1991. Updates Q.B. 89-06.

**Q.B.—91-82.** Biotechnology: Plant Protection from Agents Other Than Viruses, January 1988-March 1991. 257 citations; languages: none excluded. Prepared by Robert D. Warmbrodt. Biotechnology Information Center. April 1991. Updates Q.B. 89-06.

**Q.B.—91-83.** Welfare of Experimental Animals, January 1985-March 1991. 581 citations; languages: none excluded. Prepared by Karen J. Clingerman. Animal Welfare Information Center. April 1991. Updates Q.B. 90-10.

**Q.B.—91-84.** Solar Energy Alternatives for Agriculture, January 1986-February 1991. 378 citations; languages: English only. Prepared by Susan Chapman. Reference and User Services Branch. April 1991.

## **AWIC Series**

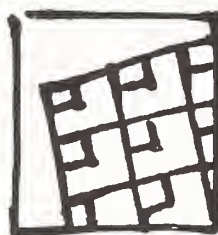
**AWIC—7.** Audio-Visuals Relating to Animal Care, Use and Welfare. Prepared by D'Anna Berry. Animal Welfare Information Center. April 1991. Updates AWIC Series #3 (June 1990).

## **Special Reference Briefs**

**SRB—91-06.** Animal Models in Biomedical Research: Swine. Prepared by Cynthia Petrie Smith. Animal Welfare Information Center. March 1991.

## **Miscellaneous**

Educational and Training Opportunities in Sustainable Agriculture. Fourth Edition. Prepared by Jane Potter Gates. Alternative Farming Systems Information Center. April 1991. Updates third edition, April 1990.



## **Agriculture Datebook**

**May 8-9:** International Business Communications (IBC) Conference: "Reducing the Use of Whole Animals in Testing With Computer Technology and In Vitro Models." New Orleans, LA. Contact: 508-650-4700.

**May 9:** American Registry of Professional Animal Scientists (ARPAS) Symposium. College Park, MD. Contact: 301-295-8638.

**May 14:** Symposium on Seafood Safety Issues. Washington, DC. Contact: F. E. Ahmed, 202-334-2673.

**May 14-15:** Conference on Water Quality, Agriculture and Public Health. Iowa City, IA. Contact: 202-447-8885.

**May 14-16:** International Symposium on Calcium Magnesium Acetate: An Emerging Bulk Chemical for Environmental Application. Boston, MA; Northeastern University. Contact: Dr. Donald L. Wise, 617-437-2989; FAX 617-437-2501.

**May 15-17:** N.E. Assn. of Electric Coops Annual Meeting. Portland, ME; Holiday Inn by the Bay Hotel. Contact: 202-382-9540.

**May 16:** Ohio State University Agricultural Economics Department Seminar. Columbus, OH. Contact: 202-786-3300.

**May 18-20:** British Columbia Aquaculture Conference. Parksville, BC, Canada. Contact: Dora Glover, 604-885-3619, FAX 604-885-6155.

**May 18-22:** The National Restaurant Show. Chicago, IL; McCormick Place. Contact: National Restaurant Association, 312-853-2525.

**May 19-22:** Second National Watershed Conference. Kansas City, MO. Contact: National Association of Conservation Districts, 713-332-3402.

**May 20:** Third National NCR-149 Symposium - Agriculture and the Environment. Lexington, KY. Contact: 202-447-7173.

**May 21-22:** EPA-Bureau of Reclamation Workshop on Agricultural Water Conservation for Environmental Benefits. Denver, CO. Contact: 202-447-8885.



**May 23-24: Con Med "Laboratory Animal Facility Management."** Cincinnati, OH. Contact: University of Cincinnati, 231 Bethesda Avenue, Cincinnati, OH 45267-0571.

**May 24: ACE-OPA 14th Annual Spring Workshop.** Chevy Chase, MD; National 4-H Center. Contact: Cathy Bridwell, 202-447-6084.

**May 26-June 8: Review of Forestry Practices in USSR.** Soviet Union. Contact: 202-447-6661.

**May 27-June 2: Symposium on Introduction of Aquatic Organisms.** Honolulu, HI. Contact: James D. Parrish, 808-956-8350, FAX 808-956-6751.

**May 28-29: President's Council on Rural America Meeting.** Morrilton, AR. Contact: 202-447-4581.

**May 30-June 1: Third Annual NABC Meeting.** Davis, CA. Contact: 916-752-2320 or Hana Barker, NABC, 607-254-4856.

**May 31-June 2: World Pork Expo.** Des Moines, IA. Contact: 515-223-2600.

**June 1-6: Animal Behavior Society (ABS).** Wilmington, NC. Contact: 919-395-3371.

**June 2-5: Medical Libraries Association.** San Francisco, CA. Contact: 312-419-9094.

**June 3-5: Hybrid Striped Bass Workshop.** Orlando, FL. Contact: Bart Baca, 904-249-3439, FAX 904-249-3698.

**June 3-6: Rural Economic Development Conference.** Oklahoma City, OK; Sheraton Hotel. Contact: 202-382-9540.

**June 3-6: USDA Regional Training Conference for Women.** Philadelphia, PA; Hershey Hotel. Contact: Barbara Gary, OAE, 202-382-0353.

**June 3-6: Watermatex (Systems Analysis in Water Quality Management).** Durham, NH. Contact: University of New Hampshire, 603-862-1900, FAX 603-862-4351.

**June 3-7: Waterscapes '91, The Conference on Water Management for a Sustainable Environment.** Saskatoon, Canada. Contact: 202-447-8885.

**June 4-6: Great Plains Ag Council Meeting.** Wichita, KS. Contact: 202-786-3300.

**June 4-6: 1991 Mid-Atlantic Aquaculture Conference.** Fredericksburg, VA. Contact: Maryland Department of Agriculture, 301-841-5700.

**June 5: REA Rural Development Conference.** Oklahoma City, OK; Excelsior Hotel. Contact: 202-447-4581.

**June 6: Regional Meeting Regarding Recently Published Animal Welfare Regulations.** Washington, DC. Contact: 202-447-7813.

**June 7-10: International Farm Animal Welfare Conference.** Aspen Institute in Maryland. Contact: Joy Mench, 301-405-1366.

**June 10-12: Aquaculture Europe '91.** Dublin, Ireland. Contact: (071)405-0500, FAX (071)405-9555.

**June 10-16: Aquaculture Canada '91 (4th Annual Atlantic Fair in conjunction with the 8th Annual Aquaculture Association of Canada)** New Brunswick, Canada. Contact: Bonnie G. Mockbee, 506-529-4578, FAX 506-529-3088.

**June 10-20: World Aquaculture Society.** San Juan, Puerto Rico. Contact: Crest International, 415-593-2704.

**June 11: International Agriculture and Rural Development Conference.** College Park, MD. Contact: 202-447-5923.

**June 16-20: 1991 World Congress on Cell and Tissue**

**Culture.** Anaheim, CA. Contact: 301-992-0946.

**June 17: Association of Food and Drug Officials' Conference.** Grand Rapids, MI. Contact: 716-847-3185.

**June 17-20: The International Symposium on Biological Interactions of Enhanced and Wild Salmonids.** Nanaimo, British Columbia. Contact: Ann Thompson, 604-756-7260, FAX 604-756-7053.

**June 19-23: Annual Meeting of the American Association of Botanical Gardens and Arboreta (AABGA).** Minneapolis, MN. Contact: Ms. Molly Offutt, AABGA Annual Meeting Program Chair, The Holden Arboretum, 9500 Sperry Rd., Mentor, OH 44060.

**June 23-26: Innovative Rural Communities International Conference.** Charlottetown, Prince Edward Island, Canada. Contact: Floyd Dykeman, Director, Rural and Small Town Research and Studies Program, Mount Allison University, Sackville, New Brunswick, Canada E0A 3C0.

**June 23-27: American Seed Trade Association Annual Convention.** San Diego, CA. Contact: 202-223-4080.

**June 24-26: National Shellfish Meeting.** College Park, MD; University of Maryland. Contact: 202-447-4423.

**June 25-27: A Symposium on Production of Juvenile Atlantic Salmon in Natural Waters.** St. John's, Newfoundland. Contact: T. J. Gibson, 709-772-4466, FAX 709-772-2156.

**June 26: National Livestock Grading & Marketing Association.** Contact: 202-447-4256.

**June 27-28: Economic Research and Planning Conference for Cooperatives.** Madison, WI. Contact: 202-245-5358.

**June 27-29: Hair Sheep Research Symposium.** St. Croix, U.S. Virgin Islands. Contact: D. S. Padda, 809-778-0050.

**June 29-July 3: 75th International Agricultural Communicators in Education Conference.** Rapid City, SD; The Rushmore Plaza. Contact: Emery Tschetter, SD State University, 605-688-4187.

**June 29-July 4: American Library Association.** Atlanta, GA.

**July: Symposium on New Crops for Europe.** Contact: Dr. N. Haq, Director, ICUC, c/o Division of Biosciences, King's College London, Camden Hill Rd., London W8 7AH, UK.

**July 1-6: EUCARPIA Meeting on Biometrics in Plant Breeding.** Brno, Czechoslovakia. Contact: J. Pesek, Soil Improvement Research Institute, Dept. of Biometrics, Lidicka 25-27, 60200 Brno, Czechoslovakia.

**July 1-10: Codex Commission Meeting - 19th Session.** Rome, Italy. Contact: 202-447-5714 or 202-447-7025.

**July 8-10: International Workshop on Biological Variation in Artemia Strains.** Ghent, Belgium. Contact: State University of Ghent, Laboratory for Aquaculture and Artemia Reference Center, FAX +32-91-236406.

**July 10-12: Agri-Tech 91.** Blacksburg, VA. Contact: 703-231-7850.

**July 11-15: American Association of Nurserymen 116th Convention.** Orlando, FL; Walt Disney World Dolphin Hotel. Contact: AAN, 202-789-2900.

**July 13-16: National Turkey Federation Summer Meeting.** Lake of the Ozarks, MO; Marriott Tan-Tar-A. Contact: NTF, 804-435-7206.

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(Ag Datebook, from page 23)

**July 14-19: 16th Annual National Wellness Conference.** Stevens Point, WI; University of Wisconsin. Contact: 715-346-2172.

**July 14-22: First International Crop Science Congress.** Ames, IA; Iowa State University. Contact: Kenneth Frey, Agronomy Dept., ISU., Ames, IA 50011.

**July 15-19: REA National Conference.** San Antonio, TX; Hyatt Regency, Paseo Del Alamo. Contact: 202-382-9540.

**July 21: AHAS Annual Meeting.** University Park, PA. Contact: 202-447-5923.

**July 21-26: 88th Annual Meeting of the American Society for Horticultural Science.** Pennsylvania State University. Contact: ASHS, 701 Saint Asaph Street, Alexandria, VA 22314-1998. 703-836-4606.

**July 22: AHAS Annual Meeting.** University Park, PA. Contact: 202-447-5923.

**July 22-25: National Institute on Cooperative Education.** Charlotte, NC. Contact: 202-245-5358.

**July 22-27: Sixth International Barley Genetics Symposium.** Helsingborg, Sweden. Contact: Prof. Roland von Bothmer, Department of Crop Genetics and Breeding, Swedish University of Agricultural Sciences, S-268 00 Svalov, Sweden.

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